DOCUMENT RESUME

ED 255 017 EC 172 076

AUTHOR Osguthorpe, Russell T.; And Others
TITLE Reverse-Role Tutoring: The Effects of Handicapped Students Tutoring Regular Class Students.
INSTITUTION Brigham Young Univ., Provo, UT. David O. McKay Inst. of Education.
SPONS AGENCY Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE Apr 85
GRANT G008300007
NOTE 21p.; Paper presented at the Annual Meeting of the American Educational Research Association (69th, Chicago, IL, March 31-April 4, 1985). Parts of the document have light and broken print. For a related document, see EC 172 077.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cross Age Teaching; Elementary Education; Interpersonal Competence; *Learning Disabilities; Mental Retardation; *Peer Acceptance; *Reading Instruction; Self Esteem; *Tutoring
IDENTIFIERS *Reverse Role Tutoring

ABSTRACT

Two studies investigated effects of programs in which handicapped students tutored regular class students. In study 1, 39 fourth to sixth grade learning and behaviorally handicapped students tutored regular class first graders in reading. In study 2, 17 intellectually handicapped students tutored regular class peers in sign language. Comparing tutors' performance with that of other handicapped students in appropriate comparison groups, results showed that tutors scored higher on reading achievement (study 1) and experienced more social acceptance (study 2) than students who did not tutor. While measures of general self-esteem were similar for both tutors and nontutors, tutors in study 1 scored higher on specific subscales assessing their perception of ability in reading/spelling and general academic ability. Results suggested that handicapped students would make more academic and personal/social progress if they were to spend some regularly scheduled time tutoring other students from the regular classroom. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED255017

REVERSE-ROLE TUTORING:

The Effects of Handicapped Students Tutoring Regular Class Students

Russell T. Osguthorpe

William Eiserman

Lenore Shisler

Brent L. Top

Brigham Young University

Thomas E. Scruggs

Utah State University

Running head: REVERSE-ROLE TUTORING

Support for the research reported in this article was provided by the Office of Special Education and Rehabilitative Services, U.S. Department of Education, Grant #G008300007.

EC 172076

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Russell T Osguthorpe
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Abstract

Although research with nonhandicapped students has shown that important benefits come from tutoring others, most tutoring studies in special education have involved handicapped students as tutees, rather than as tutors. Those studies which have included handicapped students as tutors have had them tutor other handicapped students. The purpose of this article is to report the results of two studies in which handicapped students tutored regular-class students. In the first study, 39 4th-6th grade learning and behaviorally handicapped students tutored regular-class first graders in reading. In the second study, 17 intellectually handicapped students tutored regular-class peers in sign language. Comparing tutors' performance with that of other handicapped students in appropriate comparison groups, the results showed that tutors scored higher on reading achievement (Study 1) and experienced more social acceptance (Study 2) than students who did not tutor. While measures of general self-esteem were similar for both the tutors and non-tutors, tutors in Study 1 scored higher on specific subscales assessing their perception of ability in "reading/spelling" and "general academic ability." These results suggest that handicapped students would make more academic and person/social progress if they were to spend some regularly scheduled time tutoring other students from the regular classroom.

BEST COPY AVAILABLE

BEST COPY AVAILABLE

REVERSE-ROLE TUTORING
The Effects of Handicapped Students Tutoring Regular Class Students

The results of two meta-analyses have shown that tutoring is an effective strategy for improving the academic performance of both tutors and tutees (Cohen, Kulik, & Kulik, 1982; Hartley, 1977). However, the effects of tutoring on self-concept and socialization have been much less clear. Most tutoring studies focus on academic growth of tutees, avoiding measures of self-concept and socialzation. Only one of the two meta-analyses deals directly with self-concept and bases its conclusions on only twelve studies (Cohen, Kulik, & Kulik, 1982). Neither of the reviews assesses the effects of tutoring on socialization, largely because the vast majority of studies have not included it as a dependent measure.

If social rejection and low academic achievement are the two most critical problems faced by handicapped students, tutoring research could have important implications for special education. Since tutoring allows students to work together, each taking unique roles, it is one of few intervention strategies that has the potential of improving students' academic performance, while simultaneously aiding them in their personal/social development. However, a closer look at existing research on tutoring reveals that relatively few tutoring studies have been conducted with handicapped students taking the role of tutor (Osguthorpe & Scruggs, 1984). This is an important point because the tutor is the one who has the most potential for growth in the personal/social area.

Although the authors of the previously mentioned meta-analyses did not give detailed data in their write-ups, it would appear from examining the lists of studies reviewed that only a handful of the 94 studies involved handicapped students as tutors. When handicapped students do act as tutors, appropriate research methodology is seldom used which would allow researchers to make strong conclusions about the effects of tutoring (Scruggs & Richter, in press). One of the most common methodological problems is the omission of an appropriate comparison group (similar students who did not function as tutors or tutees). In addition, studies that do include handicapped tutors nearly always have them teach tutees who are also handicapped (Maher, 1984). This point is important because if social integration and self-concept are to be enhanced, it would seem that handicapped students tutoring regular-class students (reverse-role tutoring) would be the most effective approach. The purpose of this article is to report the results of two studies on reverse-role

tutoring.

While the two studies differed in a number of ways, each involved regular class students as tutees, unlike the vast majority of tutoring research in special education. In the first study upper grade elementary aged learning disabled and behaviorally disordered students tutored regular class first graders in reading. The purposes of this study were to measure the effects of tutoring on handicapped tutors' self-esteem and attitude toward reading, as well as the academic growth of both tutors and tutees. In the second study upper grade elementary aged mentally retarded students tutored regular class peers in sign language. The primary purpose of this study was to measure the effects of tutoring on the social acceptance of the handicapped tutors.

Study 1

The purposes of the first study were to measure the effects of reverse-role tutoring on the self-esteem of handicapped tutors, as well as the reading achievement of both tutors and tutees. In order to look at these effects, a cross-age tutorial scheme was used in which upper-grade elementary aged handicapped students tutored regular-class first graders in reading. Multiple measures were taken on each of the outcomes. In addition to criterion and norm-referenced measurements of reading achievement and self-esteem, parents and teachers were interviewed regarding their perceptions of the tutoring program.

Method

Subjects

Students participating in this study came from a large suburban school district. A total of 78 special education students were involved in the study with 39 students each in the treatment and comparison groups. These 78 students came from three types of special education classes: 1) self-contained behaviorally handicapped (BH), 2) self-contained learning disabled (LD), and 3) resource students.

There were 24 self-contained BH students in the study, with 12 in each of two classrooms. Of these 24, 21 were boys and 3 were girls, with 3 in the fourth grade, 9 in the fifth and 12 in the sixth. These students were viewed as having the most serious behavioral problems for their age group in the district. However, their academic achievement varied significantly, with reading levels

BEST COPY AVAILABLE

BEST COPY AVAILABLE

from first through the twelfth grade.

A total of 26 self-contained LD students participated in the study, with 13 in each of two classes. Of these 26, 20 were boys and six were girls, with 16 of appropriate age for fifth grade and 10 for sixth grade. As with the self-contained BH students, these LD students were viewed as having the most serious learning problems for the age group in the district. Most were reading at least three grade levels behind their regular-class peers.

The remaining 28 special education students in the study included 14 students from each of two schools. There were 18 boys and 10 girls, with 8 sixth graders, 12 fifth graders, and 8 fourth graders. Of the 28 resource students, 19 were classified as LD and the other 9 were identified as BH.

In addition to the 78 special education students in the study, there were also 82 first graders who participated as tutees. These students, while not classified as special education students, were selected by their teachers as performing below grade level in reading. Also included in the study were the 10 teachers of these first grade students, 4 special education teachers and parents of the 39 handicapped tutors.

Research Design

Special education students were assigned to groups in two different ways: self-contained students were randomly assigned by classroom to either the experimental or comparison group; resource students were individually randomly assigned to either group. Thus, the experimental group (those who functioned as tutors) consisted of one class of 12 BH students, one class of 13 LD students, and 14 resource students. The comparison group consisted of an equal number of students with the same handicapping conditions and educational placement.

First graders participating in the study were individually randomly assigned to either the experimental group (functioning as tutees) or to the comparison group. With attrition this resulted in 37 first graders in the experimental group and 45 in the comparison group.

Instruments

Reading achievement. Two instruments were used to measure students' reading achievement: 1) the Woodcock-Johnson Psycho-Educational Battery, Part 2, Subtests 13, 14, and 15 (Woodcock & Johnson, 1977), and 2) the Beginning Reading 1 Criterion Test (Harrison, 1980). The subtests used from the Woodcock-Johnson test included measures of: letter and word

BEST COPY AVAILABLE

identification, word attack skills, and passage comprehension. The Beginning Reading 1 test was made specifically for the tutorial reading program used in the study and included measures of: consonant sounds, short vowel sounds, digraph sounds, decoding skills, and sight words. Thus, the two tests were similar in content, but one is norm-referenced (the Woodcock-Johnson) providing age and grade-level scores, while the other is criterion-referenced (the Beginning Reading 1 test) providing detailed mastery scores.

Self-esteem measures. In order to overcome some of the difficulties described in previous tutoring research regarding self-esteem outcomes, three different tests were used to measure this variable: The Piers-Harris Children's Self-Concept Scale (Piers, 1969), The Student's Perception of Ability Scale (SPAS) (Boersma & Chapman, 1978), and The Inferred Self-Concept Scale (McDaniel, 1973). The Piers-Harris is one of the most widely used measures of general self-concept. It consists of 80 "yes", "no" statements designed to measure students' perceptions of themselves. The SPAS is a 70 item self-report instrument which is not designed to measure general self-concept, but students' perceptions of their ability in school related areas. This might be termed a student's "academic self-concept." Unlike the first two instruments, the Inferred Self-Concept Scale is not self-administered, but filled out by the student's teacher or parent. It includes items related to student behavior from which self-concept can then be inferred.

Materials and Tutor Training

All handicapped students assigned to the tutoring group were trained to teach reading using materials adapted from an existing tutorial system (Harrison, 1980). The training occurred in three one-hour sessions and focused on specific tutoring techniques designed to teach sight words, letter sounds, and blending skills. Tutors learned how to give positive feedback for correct responses and a variety of techniques for handling incorrect responses. Before tutoring, each student was required to demonstrate mastery of the techniques by role-playing the part of a tutor with a trained examiner. Paraprofessional aides were also trained in the use of the system and later functioned as supervisors of the tutors, providing remedial training, when needed.

Procedures

Written permission was obtained from the parents of each of the students participating in the study. Once this permission was obtained, the Woodcock-Johnson test was administered as a

BEST COPY AVAILABLE

pretest to all special education students participating in the study. The Beginning Reading1 test was also admininstered to all first graders as a pretest, as well as to all handicapped students who scored lower than the third grade level on the Woodcock-Johnson test.

All special education students in both groups completed the self-report items on the Piers-Harris and the SPAS prior to the tutoring. Teachers of these students also completed pre measures on each special education student using the Inferred Self-Concept test. None of the self-esteem instruments were administered to first graders.

During the next two weeks, handicapped students were trained as tutors, after which tutoring began. Three or four student teams would tutor at a time for 15-20 minute sessions, four days per week. This procedure was followed for a period of 14 weeks, or approximately 18-20 hours of actual tutoring.

To control for "time-on-task," first graders in the comparison group received additional reading help in the classroom. During the tutoring time, first graders either read with upper grade regular-class students or received additional individual help from the first grade teacher.

At the conclusion of the 14 weeks of tutoring, the three self-esteem measures were re-administered to all handicapped students in both groups. The handicapped students who were pretested at or below a third grade reading level on the Woodcock-Johnson reading test were also given the Beginning Reading 1 test. The 82 first graders were posttested with both reading tests. After the posttest data were gathered, interviews were conducted with parents and teachers using a structured interview schedule designed specifically for this study.

Data Analyses

The primary purposes of the data analyses were to determine if the tutoring had affected the reading achievement of both tutors and tutees, as well as, tutors' self-esteem. Multivariate analysis of covariance was selected as an appropriate statistical procedure for making these determinations. In each of the quantitative analyses, pretests were used as covariates which yielded adjusted posttest mean scores for each group.

Four multivariate analyses were conducted: the first included total scores for handicapped students from each of the four main outcome measures; the second included subscale scores of handicapped students on the three self-esteem measures; the third included handicapped students' subscale scores from the Woodcock-Johnson test; and the fourth analyzed first graders' subscale scores from the Woodcock-Johnson test. Following the multivariate analyses, univariate analyses

BEST COPY AVAILABLE

were used to test differences between the two groups on individual subscales. Parent and teacher interview data were summarized by categorizing responses and calculating frequencies for each category.

Results

The findings of Study 1 will be reported in three sections: 1) self-esteem and reading achievement of handicapped students, 2) reading achievement of first graders, and 3) parental and teacher perceptions of the tutoring program.

Effects on Handicapped Students

The results of the first multivariate analysis of covariance showed that there were test score differences between the group of handicapped students who participated as tutors and the group who did not, Hotelling's T2 = .252, $p < .003$. Further analysis showed that the total scores for each of the three self-esteem measures were not different for the two groups. However, the univariate test comparing handicapped students' reading scores (on the Woodcock-Johnson) showed that those who tutored performed significantly better on reading skills than did students who did not tutor, F (1, 76) = 17.79, $p < .01$. Handicapped students who tutored scored approximately one half of a standard deviation better on their total reading score (M = 486, SD = 18), than did handicapped students in the control group (M = 476, SD = 18).

While total self-esteem scores did not show group differences, the results of the second multivariate analysis of covariance, which compared group performance on the various subscales of the self-esteem measures, showed that certain subscales were different between the two groups, Hotelling's T2 = .301, $p < .02$. Further analysis showed that handicapped tutors were more positive in their perceptions of their "general ability" (M = 7.3, SD = 3.1) than were those who did not tutor (M = 5.6, SD = 3.6), F (1, 76) = 5.32, $p < .05$. Tutors also scored higher on their perceptions of their "reading and spelling ability" (M = 7.6, SD = 2.9), than did students in the control group (M = 6.3, SD = 3.7), F (1, 76) = 4.01, $p < .05$. Again, tutors scored approximately one half of a standard deviation better than control students on these subscales. The other subscales showed no difference.

The clearest differences between groups appeared in the third set of analyses. These results showed that tutors scored better than control students on the "word attack" and the "passage comprehension" subtests of the Woodcock-Johnson. On the word attack subtest, tutors scored

BEST COPY AVAILA..

about one and a half standard deviations (M = 14.3, SD = 4.5) better than control students (M = 8.8, SD = 3.9), F (1, 76) = 49.75, p < .001. Passage comprehension scores were not as disparate as word attack scores, showing that tutors scored slightly less than one half of a standard deviation better than control students F (1, 76) = 8.99, p < .01. Grade level scores on the test showed that tutors made an average gain of eight tenths of a year, while controls improved only two tenths of a year. The results of the criterion reading test (Beginning Reading 1) showed that tutors scored an average of 85% on the decoding subtest, with control students scoring 51%. Using raw scores as comparisons, tutors performed two full standard deviations better than controls.

Reading Achievement of First Graders

Analyses showed that tutees performed better than controls on all subtests of the criterion test and on the word attack subtest of the Woodcock-Johnson. Using means adjusted for the initial differences obtained on the criterion pretest, tutors scored an average of 10 (SD =4.0) and controls scored an average of 6.8 (SD = 3.8) on the word attack section of the Woodcock-Johnson. As would be expected, differences on the criterion test were substantial on all subtests. Tutees scored better on "consonant sounds," "short vowel sounds," "digraphs," and "decoding," than did controls. Most of these differences were approximately one full standard deviation.

Parent and Teacher Perceptions

A total of 87% of the parents of the 39 handicapped tutors were interviewed following the 14 weeks of tutoring. When asked to describe how their child felt about tutoring, 73% reported that their child felt "very positive" about the program, 21% said that their child had "positive" feelings about tutoring. One parent said that the child had "negative" feelings, and one parent had no opinion. When asked about their own feelings toward the tutoring program, 83% of the parents reported that they had "very positive" feelings, with 18% saying that their feelings were "positive." Some expressed initial feelings of apprehension about their child being taken out of class to tutor another child who was, perhaps, in less need of help than their own child. Others had initial fears that their child may not be able to handle the tutoring task. However, following the tutoring, all of these parents' reservations had disappeared.

When asked whether the tutoring program had had observable effects on their child's reading ability, self-esteem, and social interaction, the responses of parents were mixed. Fully 79% felt that tutoring had positively affected their child's reading ability, compared to 21% who felt

BEST COP

that there had been no observable effect on reading ability. Regarding self-esteem, 91% reported observable improvements from the tutoring. The remaining 9% reported seeing no change in self-esteem. Parents showed much less agreement concerning effects of the tutoring on social interaction. A total of 44% said that they had seen improvements in their child's social skills, which they attributed to tutoring; while 56% reported seeing no observable change.

Teachers who had students participating in the program were strongly supportive of reverse-role tutoring. All 10 first grade teachers reported that their students felt "very positive" about participating in the program. Seven (70%) of the first grade teachers reported their personal feelings about the tutoring program as "very positive" with three (30%) citing "positive" feelings. Interestingly, prior to the tutoring, seven of the ten teachers had strong apprehensions or negative feelings about reverse-role tutoring, primarily because they worried about the ability of handicapped students to become effective tutors. The four special education teachers also felt very positive toward the program, reporting a variety of benefits to handicapped tutors. The most frequently mentioned benefit was "improved self-esteem," followed by "increased sense of responsibility," "improved social skills," and "improved reading skills." The benefits first grade teachers reported for tutees were similar, but in nearly opposite order. The overwhelming benefit reported for tutees was "improved reading skills," followed by "greater academic confidence," and "improved self-esteem."

Study 2

While Study 1 focused on academic achievement and self-esteem, Study 2 focused on the effects of reverse-role tutoring on social acceptance. In order to maximize the potential for affecting social acceptance, *peer* tutoring was used, rather than the *cross-age* tutoring scheme used in Study 1, allowing handicapped students to tutor regular-class students of the same age. Since most academic subjects would be inappropriate for reverse-role *peer* tutoring, sign language (a novel subject to both groups) was selected as the topic to be tutored.

As a prelude to the second experiment, a pilot study was conducted in which 15 fifth and sixth grade educable mentally retarded students tutored their regular-class peers in sign language (Custer & Osguthorpe, 1983). The results of this study showed that following the tutoring,

BEST COPY AVAILABLE

handicapped tutors experienced a marked increase in positive social interaction with regular-class peers. However, due to environmental constraints, no comparison group was included in the design of the study, and observation of social interaction was limited to only a few pre and post sessions.

Method

A school district was selected for the study which had two self-contained classes for "intellectually handicapped" students. Students in one of these classrooms participated as reverse-role tutors (treatment group), while students in the other classroom received no intervention (comparison group). A non-equivalent control group design was selected for this study because experimenters felt that the threats posed by contamination were more serious than those posed by non-random assignment.

The treatment group included 17 students ranging in chronological ages appropriate for the fourth through the sixth grades. Of the 17 students, 11 had been classified by the district as "intellectually handicapped," 5 as "severely handicapped," and 1 as "multiply handicapped." The comparison group included 16 students of appropriate age for the fifth grade, all of whom had been classified as "intellectually handicapped." Most of the students in each of the groups had been attending a self-contained classroom in their school for several years.

A total of 20 regular-class peers voluntarily participated in the study as tutees, with three of these functioning as alternates in case of absences.

Measures and Procedures

Tutor Training. Tutor training procedures for this study were derived from previous research on reverse-role tutoring (Osguthorpe, 1984). During the first eight weeks of the project, handicapped students in the treatment group received training in sign language and tutoring techniques. The 30 minute sessions were conducted by a tacher's aide and occurred twice each week. In addition to learning basic signs (alphabet, numbers, colors, animals, etc.), tutors learned how to demonstrate each sign, monitor incorrect responses, and give positive feedback to the tutee for correct responses.

Specially developed materials were used to reduce the amount of training needed. These

materials consisted primarily of a set of prompt cards on which the handicapped tutor saw a photograph of the object or word, graphic representations of the hand shapes (signs), and the printed word to be signed. The reverse side of the prompt cards consisted of only the printed word to be signed. Groups of cards were bound with large rings and mounted on small, cardboard table easels. Before becoming a tutor, each handicapped student was required to show mastery of the signs and tutoring techniques using the prompt cards.

Tutoring Sessions. During the next 10 week period, each handicapped student in the treatment group tutored a regular-class student in 15 minute afternoon sessions, 3 days per week. The aide supervised each tutoring session, ensuring that tutors knew what to teach and when to teach it. By using the prompt cards the handicapped student had a constant reminder of how the various hand shapes were to be made, while the tutee was always aware of which word was being taught.

Free-play observations. The primary outcome measure for this study was the direct observation of handicapped tutors' social contact with regular-class students during recess. At the treatment school a total of 20 observations were made prior to the beginning of tutoring ("pre-treatment") with 68 additional observations being conducted, once tutoring was in progress ("during treatment"). An observer, familiar with the children, used a structured observation form to record interaction between handicapped and regular-class students. Each time a tutor interacted with a regular-class student, the amount of elapsed time was recorded, as well as a description of the interaction. These descriptions were later judged as being either "positive" or "negative." In order to establish reliability of the measure, a second observer conducted five observations which were compared with the first observer's records. Because this comparison showed 98% agreement between the two observers, only one observer participated for the remainder of the study.

Similar, but fewer observations were conducted at the control school, with one measure being taken prior to tutoring and three measures being taken during the tutoring. The reduced number of observations was made largely because there were no interactions to observe. After seeing no interaction between handicapped and regular-class students, the observers asked the teacher about her own observations. The teacher assured the observers that she had seen no interaction between her students and regular-class students during recess.

BEST COPY AVAILABLE

BEST COPY AVAILABLE

Additional measures. In addition to free-play observation, data were gathered on parental and tutee attitudes, as well as tutoring and signing skills of the handicapped tutors. Using a structured interview form, each tutor's parents were given an opportunity to express their perceptions of the project during a telephone interview. Likewise, tutees were asked in personal interviews to respond regarding their attitudes toward the project and toward the handicapped tutors themselves. Tutors were also given individually administered mastery-tests on their ability to remember all of the signs that had been introduced, as well as their ability to use proper tutoring techniques.

Results

In this section of the article results will be given of free-play observations, parent interviews, tutee interviews, and sign language and tutoring skills tests.

Free-play Observations

The results of the free-play observation were summarized in the following ways: 1) all data were converted to percentages of observation time spent in positive interaction with regular-class students; 2) for both treatment and comparison groups, means were calculated for "pre" and "during treatment" totals; 3) to give a more detailed view of student behavior, each series of ten treatment group totals were combined, providing a week by week picture of social interaction.

The results of the free-play observations showed that after the tutoring began, handicapped tutors spent more than twice the amount of time positively interacting with regular-class students than they had prior to the tutoring (4% vs. 11%). A comparison of the pre-treatment vs. during treatment means (using a paired t-test), showed that this gain in tutors' social behavior was statistically significant, $t\ (16) = 2.66$, $p < .02$. Students in the comparison group did not evidence any interaction with regular-class students either before or during the treatment period.

Further analysis of the data showed that during the first set of ten observations at the treatment school, tutors' interaction time rose only slightly from an average of 4% to 6% of the recess time. However, during the second set of ten observations the interaction time rose to 13% and did not fall below 9% through the end of the experiment. In other words, the increase in

positive social behavior occurred during the second and third weeks after the tutoring had begun. It should be noted that not all of the tutors experienced an increase in social interaction. Of the 17 tutors, 41% experienced a mean gain of at least 6% in positive interaction, while 58% of the tutors experienced a negligible change. Very little negative interaction was observed either before or after the tutoring began. Of all positive interaction observed, 19% occurred between tutors and their tutees with the remainder occurring with other regular-class students. Interestingly, of tutors who did show an increase in social interaction, 87% were classified as intellectually handicapped with the remaining 13% being classified as severely or multiply-handicapped.

Parent Interviews

Parents of 82% of the tutors were available for interviews. In describing their child's feelings about the tutoring program, all parents reported that their child had positive or very positive feelings towards the program. Only one parent had reservations regarding the child's participation in the program.

When asked if their child's social interation seemed to have been affected, 71% of the parents reported noticing an improvement. Some parents mentioned improved sibling relations, while others commented on their child's increased ability to socialize with friends.

When asked if the tutoring experience had had an effect an how children "felt about themselves," 64% of the parents reported that they perceived a noticeable improvement in their child's self-esteem. The remaining parents said they had not seen a change. Most of these parents reported that their child already had high self-esteem, before the project began.

While not specifically targeted in the project, half of the parents described improvements in their child's communication skills. Most of these parents felt that learning sign language and teaching it to other students had helped their children express themselves more clearly. The remaining parents did not mention any improvements in their child's communication skills.

Tutee Interviews

A total of 15 (75%) of the tutees were interviewed at the end of the study. When asked what they had learned from the experience, 57% of tutees mentioned sign language, with 43% saying that they had learned to appreciate people like their handicapped tutors. When asked what they had learned about mentally handicapped students, 82% of the tutees' responses were positive, reporting that they learned that mentally handicapped students "have feelings," that "they're nice," and that

BEST COPY AVAILABLE

BEST COPY AVAILABLE

they "are smart at some things." The remaining 18% of the students had difficulty verbalizing what they had learned from the experience.

When asked if they felt differently toward their tutors following the tutoring, all of the tutees reported that they felt better toward their handicapped tutor. Most remarked that they felt more comfortable being friends with handicapped students. When asked if they thought the tutors' feelings had changed toward them, all of the tutees perceived a positive change. Fully 71% of the tutees said that they felt that their tutor "liked them now," with the remaining tutees reporting that the tutors seemed more "relaxed" around them by the end of the project.

Signing and Tutoring Skills

The results of the signing skills test showed that tutors remembered an average of 78% ($SD = 18$) of the signs taught during the study, while tutees scored an average of 66% ($SD = 15.16$).

The results of the tutoring skills evaluations showed that when averaged across all tutors the mean scores always fell within the "good" to "excellent" range. In other words, most handicapped students included in the study were able to master the basic techniques of tutoring.

Discussion and Conclusions

The results of the two studies reported in this article show that with appropriate training and supervision, handicapped students can function effectively as tutors. They can learn to demonstrate instructional content, monitor tutee performance, and give appropriate feedback. While some students developed these skills more readily than other students, even those with more severe handicaps were able to function in the tutoring role. The fact that most handicapped students became highly effective tutors is one of the most important findings of this research. The greatest concern of parents and teachers in a reverse-role tutoring project is their fear that handicapped students will be placed in a role too difficult for them to handle. One special education teacher voiced her reservations early in the project, indicating that learning disabled students would be asked to tutor in their weakest subject (reading), and be required to work with first graders who might soon exceed the tutors in reading skills. While these concerns are logical, the results of this research would suggest that such problems simply do not arise, if tutors and learners are matched

appropriately. Data from Study 1 indicated that the tutors with the lowest reading level at the beginning of the study made the most gains in reading skills, as a result of acting as tutors.

The data further showed that both tutors and tutees experience growth in the topic tutored. Those in the sign language study developed an impressive signing vocabulary in a relatively short period of time. Those in the reading study showed more growth in reading than comparison students. This conclusion is important because it implies that teaching someone else is an effective, but seldom used strategy for improving learning among a wide variety of handicapped students. The results are congruent with the findings of previous tutoring research in which regular-class students functioned as tutors (Cohen, Kulik, & Kulik, 1982).

From the results of Study 2, it can be concluded that socially isolated handicapped students often experience increased social acceptance as a result of tutoring regular-class peers. While all of the handicapped tutors in the sign language study did not show marked increases in social interaction, some made impressive gains. When the gains are compared with other students in similar self-contained settings, the improvements are especially meaningful. In other words, self-contained students (whether LD or EMR), without some intervention like reverse-role tutoring, often have little, if any interaction with their peers in the regular classroom. It is important to note that the socialization benefits measured in Study 2 resulted from an intervention that did not include the direct teaching of social skills. Because tutors are placed in a leadership role with their nonhandicapped peers, opportunities are available for reciprocal modeling, as well as direct practice of social skills. These findings have implications for handicapped students who may now be placed in close proximity to regular-class students, but who have not become truly integrated. The findings also have implications for social skills training theory which has not focused on tutoring as an intervention for increasing social acceptance (Gresham, 1984).

For a variety of reasons conclusions regarding the effects of tutoring on self-concept cannot be stated with as much confidence as the conclusions concerning academic achievement and social acceptance. Data from the first experiment showed that handicapped tutors improved (over controls) in their perception of ability in topics related to the topic tutored (reading and spelling). While measures of general self-concept did not show significant gains for students in treatment groups, parents and teachers reported that self-concept was in their opinion the primary benefit of the program. The reasons for the ambiguity of the findings regarding self-esteem may stem from two factors. First, measuring self-esteem is more difficult than measuring academic performance, and perhaps, most difficult with handicapped students (Wylie, 1974). Second, it may be more

BEST COPY AVAILABLE

BEST COPY AVAILABLE

appropriate to expect gains in attitudes toward the tutoring topic, than in general self-esteem. Certain items on tests of general self-esteem would likely not be afftected by a student's participation in a tutoring program.

Since previous research has warned against the negative effects of tutoring on students with initially low self-esteem, further analyses were conducted on the measures of general self-esteem (Strodtbeck, Ronchi, & Hansell, 1976). The analyses showed that although these low self-esteem tutors did not show significant gains, they likewise did not show a significant drop in general self-esteem, as students had in the research reported by Strodtbeck, et al. The data further showed that these students contributed as much as higher self-esteem students to the gains on specific subscales measuring students' attitudes toward the tutorng topic. This finding is likely due to the amount of structure included in the tutoring experience in both Study 1 and Study 2.

The additionai data gathered from parents, teachers, and tutees showed that each of these groups perceive reverse-role tutoring as an effective intervention strategy in special education. They believe that handicapped as well as nonhandicapped students receive a variety of academic and social benefits from their participation as tutors or tutees. Interestingly, parents report benefits they have noticed at home in addition to the observed benefits measured in the school setting.

The results of the two studies have important implications for special education. At the present time most handicapped students involved in tutoring programs participate only as tutees. Those who do get an opportunity to tutor, usually work with other handicapped students. In both cases students are likely to miss some of the benefits which participants experience as they tutor others from the regular classroom, benefits which should be pre-planned by teachers, parents and the student.

One strength of the research reported in this article is the emphasis placed on the needs of handicapped tutors. For example, in Study 1 handicapped tutors' reading skills were pre-assessed as carefully as the skills of the first graders they were tutoring. Because of this, teachers were able to make more appropriate decisions regarding the pairing of a handicapped tutor with a regular-class tutee. Past tutoring research has often focused so heavily on the tutee that tutors have been viewed more as service providers, than as students with their own set of needs. In implementing tutoring projects in special education, care should be taken to ensure that specific needs of tutors are being addressed (Gerber & Kauffman, 1981). If the handicapped student's need is primarily academic, a cross-age scheme, such as the one used in Study 1 could be prescribed. If a handicapped student's primary need is social acceptance, a peer tutoring

configuration, such as the one used in Study 2, should be considered. In either case, emphasis should be placed on the needs of tutors, as well as the needs of tutees. When equal attention is given to the unique characteristics of both students in the tutoring diad, both handicapped and regular-class students will reap maximum benefits.

BEST COPY AVAILABLE

BEST COPY AVAILABLE

References

Boersma, F. J., Chapman, J. W. & Maguire, T. O. (1979). The students' perception of ability scale: An instrument for measuring academic self-ceoncept in elementary school children. Educational and Psychological Measurement, 39, 1035-1041.

Cohen, P. A., Kulik, J. A., & Kulik, C. C. Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 19, 237-248.

Custer, J. D. & Osguthorpe, R. T. (1983). Improving social acceptance by training handicapped students to tutor their nonhandicapped peers. Exceptional Children, 50, 173-174.

Gresham, F. M. (1984). Social skills and self-efficacy for exceptional children. Exceptional Children, 51, 253-261.

Gerber, M., & Kauffman, J. (1981). Peer tutoring in academic settings. In P. Strain (Ed.), Utilization of classroom peers as behavior change agents (pp. 155-187). New York: Plenum Press.

Harrison, G. V. (1980). The Beginning Reading 1 Criterion Test. Blanding, Utah: METRA.

Hartley, S. S. (1977). Meta-analysis of the effects of individually paced instruction in mathematics (Doctoral dissertation, University of Colorado, 1977). Dissertation Abstracts International, 38 (7-A), 4003. (University Microfilms No. 77-29, 926).

Maher, C. A. (1984). Handicapped adolescents as cross-age tutors: Program description and evaluation. Exceptional Children, 51, 56-63.

McDaniel, E. L. (1973). Inferred Self-Concept Scale Manual. Los Angeles: Western Psychological Services.

Osguthorpe, R. T. & Scruggs, T. E. (1984). The implications of tutoring research for special education. Internal publication, Brigham Young University, Provo, Utah.

Osguthorpe, R. T. (1984). Handicapped students as tutors for nonhandicapped peers. Academic Therapy, 19 (4), 474-483.

Piers, E. D. (1969). Manual for the Piers-harris Children's Self-Concept Scale. Los Angeles: Western Psychologiscal Services.

Scruggs, T. E. & Richter, L. (in press). Tutoring interventions with learning disabled students: A critical review. Learning Disability Quarterly.

Strodtbeck, F. L., Ronchi, D., & Hansell, S. (1976). Tutoring and psychological growth. In V. L. Allen (Ed.), Children as Teachers, New York: Academic Press.

Woodcock, R. W. & Johnson M. B. (1977). Woodcock-Johnson Psycho-educational Battery, Part: Two: Tests of Achievement. Allen, Texas: DLM Teaching Resources.

Wylie, R. C. (1974). Self-concept theories and problems of research methodology. In The Self-Concept, Vol. I (pp. 7-37). Lincoln, Nebraska: University of Nebraska Press.

BEST COPY AVAILABLE